REMARKS

Claim 1 is amended. Claims 2, 3 and 17-55 are canceled. Claims 1 and 4-16 are in the application for consideration.

Applicant hereby affirms the provisional election to prosecute the invention of Group I.

The title has been amended to overcome the Examiner's rejection.

Claim 1 is amended to include the subject matter of claim 3 and to recite that the high K substantially crystalline material is received over the high K substantially amorphous material in the capacitor dielectric region. Support for the same is inherent from Applicant's application as filed at, for example, Fig. 2 and at p.9, lns.8-11.

Claim 1 now recites integrated circuitry comprising a capacitor having a first capacitor electrode, a second capacitor electrode and a high K capacitor dielectric region received therebetween. The high K capacitor dielectric region is recited to comprise a high K substantially amorphous material layer and a high K substantially crystalline material layer. The high K substantially amorphous material and the high K substantially crystalline material are recited to constitute different chemical compositions. The high K substantially crystalline material is recited to be received over the high K substantially amorphous material. Such a construction is not shown or suggested by the references of record.

For example, Anderson et al. discloses same composition high K capacitor dielectric regions having amorphous and crystalline phases. It does not disclose or suggest, whether taken alone or in combination with other references, positioning a crystalline phase portion of a dielectric region over an amorphous phase of a dielectric region where such regions are of different composition from each other. While Shimizu et al. discloses a high K capacitor dielectric region comprising two different compositions, they do not in any way disclose or suggest forming their region to be of different phases, and certainly not the positioning of a first crystalline material of a capacitor dielectric region over a different lower amorphous material. The structure claimed by Applicant would not be obvious over a combination of these or other references, and Applicant's claims cover and enable formation of a lower amorphous material having a higher crystallization temperature than an upper material which ultimately will be crystalline, in accordance with claim 1. Accordingly, Applicant's independent claim 1 should be allowed, and action to that end is requested.

Applicant's dependent claims should be allowed as depending from allowable base claims, and for their own recited features which or neither shown nor suggested in the cited art. Action to that end is requested.

This application is believed to be in immediate condition for allowance, and action to that end is requested. If the Examiner's next anticipated action is to be anything other than a Notice of Allowance, the undersigned

respectfully requests a telephone interview prior to issuance of any such subsequent action.

Respectfully submitted,

Dated: 2-28-01

By: _____

Mark S. Matkin
Reg. No. 32,268

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. 09/512,149
Filing Date . . . . . February 23, 2000
Inventor . . . . . Vishnu K. Agarwal
Assignee . . . . . Micron Technology, Inc.
Group Art Unit 2814
Examiner . . . . . M. Pizarro-Crespo
Attorney's Docket No. MI22-1322
Title: Integrated Circuitry Including a Capacitor With an Amorphous and a Crystalline High K Capacitor Dieletric Region

MARKED-UP CLAIMS ACCOMPANYING RESPONSE TO NOVEMBER 9, 2000 OFFICE ACTION

To: Assistant Commissioner for Patents
Washington, D.C. 20231

From: Mark S. Matkin (Tel. 509-624-4276; Fax 509-838-3424)
Wells, St. John, Roberts, Gregory & Matkin P.S.
601 West First Avenue, Suite 1300
Spokane, WA 99201-3828

The claims have been amended as follows. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

1. (Amended) Integrated circuitry comprising a capacitor comprising a first capacitor electrode, a second capacitor electrode and a high K capacitor dielectric region received therebetween; the high K capacitor dielectric region comprising a high K substantially amorphous material layer and a high K substantially crystalline material layer, the high K substantially amorphous material and the high K substantially crystalline material constituting different chemical compositions, the high K substantially crystalline material being received over the high K substantially amorphous material.

Cancel claims 2, 3 and 17-55.